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METHOD AND STRUCTURE FOR SELECTING ANISOTROPY AXIS ANGLE OF MRAM DEVICE FOR REDUCED POWER CONSUMPTION

Abstract

A method for determining a desired anisotropy axis angle for a magnetic random access memory (MRAM) device includes selecting a plurality of initial values for the anisotropy axis angle and determining, for each selected initial value, a minimum thickness for at least one ferromagnetic layer of the MRAM device. The minimum thickness corresponds to a predefined activation energy of an individual cell within the MRAM device. For each selected value, a minimum applied magnetic field value in a wordline direction and a bitline direction of the MRAM device is also determined so as maintain the predefined activation energy. For each selected value, an applied power per bit value is calculated, wherein the desired anisotropy axis angle is the selected anisotropy axis angle corresponding to a minimum power per bit value.